

Jordan Croteau

Philosophy of Education

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I'm tired of hearing false statements about how mathematics is a subject that students either know or they will never understand. This idea was developed because teachers struggle to connect with students when teaching math. All students know how to read and write, so they can do math as long as they believe it. Students that label themselves as 'the ones that don't understand' will never be successful in math. Teaching math can't continue to be the boring process of teachers giving students formulas and definitions to learn. Math is not meant to be learned with memorization and pointless formula calculations. Math is real, exciting, and all around us and teachers need to show that. Mathematics is filled with manipulative based discovery. There are three important strategies that I have learned to enhance mathematical learning, discovery, perspective and reflection.

First, we will dig into my philosophy of discovery in the math classroom. Student discovery is one of the most powerful tools for success in math. When students are given a chance to unwrap the secrets behind mathematics it gives them a sense ownership and pride in their work. Being told a formula or definition to compute a problem gives students zero background knowledge on why math works. Discovery also leads to student interest and engagement. If a teacher is able to grasp the interest in his/her students, then the quality of the

work is enhanced. Students begin to get excited about their work. Going above and beyond the expectations of the assignment. Teachers really need to focus on building those rich assignments that allow students to flourish. My philosophy was developed off the idea of constructivism in the classroom.

Constructivism is an educational philosophy that puts an emphasis on a, hands on, experimental, teaching and learning system. Instead of teachers focusing on what to lecture, they put more thought into the situations they want to put their students in. Situations that get students to discover the material and critically think through the process. Critical thinking is more important than memorizing a specific fact. I believe that my students should learn the mathematic material to be successful but I also want them to be discoverers. I want to give them the tools to be creative problem solvers then challenge the with the material. For example, for a geometry unit that focuses on area, volume, and scale. First, I will provide each student with definitions and formulas for those three vocab words for them to be successful. Then I will put them in a real-world situation. Using google sketchup, students will take on the role as architectures building a house that fits a specific budget. They will first draw the floor plans out on graph paper to get the layout of the house, the area. Next, students will move onto google sketchup to then bring their homes alive in three dimensions, the volume. With this discovery based lesson, students will become so engaged in designing their house that the end product will be something they are proud of. This idea of a unit in geometry can bring area, volume and scale

alive in the classroom. Students will finally get rid of the question, why are we doing this? Who know, lessons like these may bring ideas of future professions into the picture.

My philosophy of discovery can introduce an entirely new way of teaching mathematics. As times are changing our educational system is making a big shift towards proficiency based education. Philosophies and learning styles are evolving and we are moving towards a right brain way of thinking. Students, teachers, and parents are all having a say in what is being taught and how it is done. We are in a society that no longer needs people to remember facts but rather be creative problem solvers. This is why school are moving towards the proficiency based education, traditional lecture is not making students good citizens. The thing that I love most about proficiency based education is the fact that it is all about the student. This will also eliminate teachers rushing through the material and leaving students behind. Students can now get the extra help they need before moving on. Discovery in the classroom is the first step in this shift, next comes perspective.

In today's classroom math is taught in one perspective to all students, mostly by lecture. Providing different perspectives on what certain material really means is also important in learning. Students may discover something in mathematics but if a teacher can provide multiple meanings for their discovery, it will deepen their learning. For example, during my number theory presentation, in EDU 361, I learned many new tricks that will help students understand decimal fractions. First of all, when teachers read decimals it needs to be done the correct way. Reading 1.14 is not "one point one four", it should be read "one and fourteen hundredths". Students need to hear this because it tells them how important place value is when

working with decimals. Perspective is great for all teachers to keep in mind when teaching mathematics to a diverse group of students. Whether it is representing or talking about a concept, teachers need to provide multiple means and perspectives of understanding the material.

Perspective comes in all different shapes and forms. Whether it is incorporated in student assessment or instruction, teachers need to put themselves in their students' shoes. Assessments should promote learning, not just measure it. As teachers, we need to get away from the end of the unit tests that measure one perspective of a student's performance. Assessment should be done multiple times within each unit, so students are provided with feedback. This is an opportunity for teachers and students to see what they know, along with what still needs to be learned. Different perspective assessments may take on the forms of summaries, reflections, quizzes, tests, posters, slideshows, and even self-assessments. Next, is trying to create a different perspective for applied and concept rich instruction.

Based on my K-12 experience concept rich instruction was mostly nonexistent. In my opinion most math classes are taken over by a set of standards, or definitions/formulas, that need to be covered within a certain time period. This eliminates the creativity and exploration into what math really means. I would have enjoyed math much more in high school if it included concept rich instruction and activities. There are so many different perspectives that can be taken on the material in a math classroom. Now all teachers do is give students a formula and asked to compute the answer. Decontextualization is that students must experience a variety of applications to be able to generate a concept. This means that students should explore the

material to a point in which they can develop the formula or concept themselves. Once students gain the perspective on what a formula is used for, they then can apply the thinking to any problem. Why limit a student's perspective in the classroom, when we can embrace it?

Students bring in a wide range of perspectives and experiences to each and every class. As a teacher, I want to embrace those perspectives that students have. Giving them a chance to explore their own thoughts and ideas. The main goal of mine is not to tell students how to think, but rather provide them with the tools to develop their way of thinking. Progressivism is an educational theory that thinks ideas are meant for experimentation and the learning comes from the questions the students have. Human experiences allow for development for individual beliefs and ways of thinking. Progressive schools put an emphasis on how to think rather than what to think. A curriculum that focuses on interdisciplinary problems rather than a just learning the material specific to each subject. Education is student centered, all have a part in the decision making in schools. Progressivism goal is to give each learner social experiences, social studies, projects, problems, and experiments that will result in knowledge of the specific subjects. My philosophy of progressivism comes from my idea of learning through perspective. After students have discovered the material and taken their own perspective, it is time for them to reflect on their work.

Reflection can be done in the math classroom every day and it is critically important to learning. The main reflection strategy is writing. Writing in the math classroom is completely nonexistent today. It is the only class that people believe does not need writing, why is that?

Writing is a tool that can be used to conclude thoughts and ideas. After learning a new concept in

math, students can use writing to reflect upon their learning. They can write about why a concept is important, how they learned it, how to solve a problem, or even why they are struggling to understand something. Not only is it good for students to wrap up their ideas but writing will also give them a new perspective of how to learn math. Writing is one of the major reflection strategies for student learning.

Writing is a tool used to reflect, document, and understand different topics. Using these tools of writing, math teachers can bring their students to an entire new level of thinking.

Reflecting is very important for students because it is a recap of what they just learned. I started to understand how important reflecting was during my college education. I was writing about different topics and in different subject areas. I realized the power of reflection and how it enabled me to remember and understand at a deeper level. Reflecting is a powerful tool that may only takes a few minutes. Also, writing can be used to create a document that students can then edit and refer to when needed. Math is a subject that requires a continuous knowledge of the material. Many times, you will learn about a concept and then use that concept later down the road. Having students reflect and document their work gives them a resource to look back upon.

As a high school math teacher, I hope to use writing in my classroom every day. Through reflection and documentation, there are many reasons to include writing in the math classroom. Once teachers have established discovery, perspective and reflection in their classrooms, they now need to focus on creating a good learning environment.

One of my best learning experiences was in foundations of mathematics, with Lori Koban. As math classes have become harder, I have relied on good teaching to help me understand the material. All through middle and high school I excelled in math and it was always easy for me. When I started here at UMF some of my math courses really challenged me, to a point where I didn't feel like I excelled anymore. Last year I took two math classes, calculus III and foundations of math.

Calculus III was one of the worst learning experience I've ever had. Once calculus and three dimensions started to intertwine I was completely at a loss. I had a professor that I felt I couldn't approach, not that he was a bad guy, but I never felt any type of connections with him. Even on days that I knew I needed help, I would never go and see him, but rather I would just rely on my classmates for help. I ended up getting a C in calculus III and I was happy. All year I was praying just to pass the class.

Foundations of math was a completely different story. Lori Koban created such an open classroom atmosphere that for the first time I enjoyed every minute of class. Even when class was over homework came easy and exciting. The best part was when I didn't understand the material on the homework, I would go straight to Lori's office hours for help and all my questions would be answered. The relationship that Lori had with me was what made foundations of mathematics my best learning experience.

Based on my experiences with teacher relationships and interactive learning environments, I have realized how critical they are for student success. As a teacher, I want students to feel comfortable to walk into my classroom each and every day. I want students in

my class to take risks and not be afraid to fail. Asking questions and making predictions is how we learn. Also, I want to take on a friendly professional relationship with my students. I want them to feel like they can approach me at any time with any questions that they may have, even if they are not school related. Building trust with your students can create a powerful learning experience, like I had with Lori Koban.

When I was in middle and high school I made the mistake of doing my work for others rather than myself. As a teacher, I want to reach students before they make that mistake, give them a chance to realize how important a good education can be. Being a teacher role model can make a difference in a kid's life. Teachers need to educate students not only on specific material but also the importance of “why”. Many students struggle understanding why school, and math specifically, is important. In class you get the question, when are we going to use this in real life? Creating those lessons that come alive will engage and eliminate the questions on why. School will then remind them of the good old days in kindergarten, when they enjoyed going to class every day to learn and see their teacher and friends.

Students sometimes only get good grades to make their parents and teachers happy, or to play sports. Thinking back to my middle school experience I can think of an example of how I wanted good grades, but not for myself. Relating it back to how students at that age have a greater capacity to critically think, it can also get them in trouble. In middle school and today, I am not particularly fond of reading, so if I am given the chance to get out of it, I will. My friends and I in middle school decided to help each other cheat our way through quizzes that we had to take after reading a book. We noticed that each of the test, specific to each book, always had the same



questions in the same order. We would then each read one book and take the test for each other, so we would get the points for three books instead of one. As a group, we would carefully check out each book in the library and wait a while to take the quiz, so it looked like we were actually reading. After getting away with this for two or three months we finally were caught. The moral of the story is that we used teamwork and organization but for the wrong reasons. As a teacher, I want to channel that teamwork towards building an authentic learning experience rather than them getting in trouble. This is an example of how I was trying to get good grades for the wrong reasons. I truly believe that if students know how powerful an education can be we can eliminate trouble like this.

My passion for teaching has grown tremendously since enrolling in the University of Maine Farmington. I spend college breaks and summers substitute teaching and coaching baseball. As a substitute teacher, my goal is to create an environment for all students to have a productive day. Not only have I taken the math classes required to enhance the math skills I hope to be teaching, but classes like Math Methods and Practicum have prepared me to teach to a variety of different personalities and learning styles.

At the University of Maine Farmington, I have also gained experience collaborating with students, peers, and teachers. It is my belief that math is most effective when treated as a collaborative effort between all individuals involved. Collaborating with my mentor teacher and students will enable me to meet all of my teaching goals. These goals include strong relationships with my students, engaging interactions, and implementation of technology in the classroom. I am eager to build relationships with my mentor teacher and students as we can all

learn from, and with, one another. There are many ways to reach the same answer and I have the ability to learn many strategies to problem solving. Some strategies may include the use of new technology in the classroom. As we are moving toward a very technology driven world I have been fortunate to utilize teaching aids such as SMART Board, Tinker Plots, Fathom, to name a few. I believe all of these goals are attainable by working with my mentor, students, and school community.

I am beyond excited to start my teaching career and learn new strategies along the way. I have had the chance to learn many things here at UMF and I am excited to see where my next step takes me. I have developed a discovery based philosophy that shapes students into well rounded individuals. My philosophy has changed tremendously from day one here at UMF. I can't wait to see how it changes even more as I head out into the school systems.